

INTERNATIONAL BULLETIN

OF PLANT PROTECTION

1933

No. 1

DISCOVERIES AND CURRENT EVENTS *

North Africa: Desert Locusts (*Schistocerca gregaria*) (1).

During September 1932 no information was received at the Regional Station of Algiers from Algeria, Tunisia, Morocco and Tripolitania.

ALGERIA.

- 7 October 1932 — A pink swarm (with some yellow individuals) coming from the S. E. settled in the palm plantations of Tidikelt and Aoulef. It departed on the 10th flying W. N. W.
- 9 " " — A small yellow swarm coming from the S. passed over Tamanrasset.
- 11 " " — A large swarm settled in the region of Imérage (Aoulef) seems to have flown north.
- 19 " " — A large red swarm coming from the S. settled at Khechiba (25 km S. of El-Goléa). It departed on 20th flying N. N. E.
- 31 " " — A small red swarm coming from the N. passed over Beni-Ounif flying S.
- 20 November » — A swarm coming from S. W. passed over Ksour Tabelbala flying N. E.
A scattered red swarm coming from S. W. passed over Beni-Abbes flying N. E.
- 26 " " — A red swarm of medium density coming from S. W. passed over Menouarar (Colomb-Béchar) flying N. E.
- 28 " " — A large red swarm settled 8 km N. W of Colomb-Béchar, flew away towards N. E.
A large swarm passed over Abadla (Colomb-Béchar) flying N.
A somewhat dense red swarm settled at Daoura (Tabelbala).

* Under this and the third heading the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Économiques) to the International Institute of Agriculture.

FRENCH MOROCCO.

- 16 October 1932 — A red swarm 10×2 km passed over Azaghar Tagmout (90 km S. E. of Taroudant).
- 11 November » — A grey swarm 20×5 km. coming from the S. settled in the evening 30 km. S. S. W. of Taroudant. It departed on the 12th flying first E. and then N. W.
- 12 » » — A large swarm coming from the S. E. passed over the forest of Ademine (35 km. S. E. of Agadir) and then flew N. E.
- 13 » » — A swarm reported on the 11th and 12th 30 km S. S. E. of Taroudant settled near Oued Issene (28 km E. of Agadir).
A swarm coming from the S. settled 50 km E. S. E. of Agadir.
- 15 » » — A swarm 4×2 km coming from the S. settled on the Aït Tinkert (30 km N. N. E. of Agadir).
- 16 » » — A swarm 5×4 km passed 70 km E. S. E. of Mogador.
- 17 » » — A swarm coming from Haha (Region of Mogador) passed over Argta.
A pink swarm 5×3 km coming from the Chiadma settled at Tighurst. It left on the 18th flying N. and passed over Sidi-Mokta (between Mogador and Chichaoua).
- 18 » » — A large red swarm coming from the Haha settled at Mtougha, took flight and settled again on the 20th S. of Imi N'Tanout ; part took flight again towards the N. E.
Numerous large swarms reported between Cap Juky and the Drâa (Rio de Oro).
- 19 » » — A large swarm settled in the region of Tarjicht (80 km N. E. of Tiznit).
- 21 » » — A swarm of 40×4 km passed to the S. of Agga flying N. A pink swarm coming from the S. settled at Angherif (Tatta).
- 25 » » — A large red swarm passed 15 km W. of Imi N'Tanout flying N. E.
- 26 » » — A red swarm coming from the S., 5×3 km, passed Maguenoum (48 km E. S. E. of Taroudant) flying E.
- 28 » » — A red swarm of 100 sq. km coming from the S. settled at Fezna Dijorf (12 km N. W. of Erfoud).
A red swarm of 10 sq. km. coming from the W. settled at Tafilalet.
- 28-29 » » — A red swarm 2×4 km coming from the N. settled in the night 65 km E. of Cap Chir.
- 29 » » — A large dense swarm passed over Ait Tinkert.

French West Africa: Desert Locusts (*Schistocerca gregaria*) in Mauritania (1).

- 24 September 1932 — A very large pink swarm coming from the S. passed over Atar flying N. with a hot S. E. wind.
 5 October » — Hopper bands in the region N. of Maudjeria (Tidjikja).
 5-10 » » — Large pink swarms with some yellow individuals coming from the S. passed over the Circle of Adrar flying N.

Eritrea: Tropical Migratory Locusts (*Locusta migratoria migratorioides*) (2).

During October 1932 only very few swarms of *Locusta migratoria migratorioides* were reported in the western and eastern plains.

On the 2nd and 10th numerous individuals of unknown colour coming from Agordat flew in a south-westerly direction; on the 15th more locusts passed over Ducambia and Agordat.

On the 27th a dense swarm coming from Abyssinia entered the territory of Eritrea over the plain of Baduma, but immediately crossed back over the frontier.

On the 12th in the eastern plain a number of yellowish locusts coming from the south flew north.

During the whole month numerous bands of hoppers appeared in the territory of Cheren, in Hamasien and Acchelé Guzai.

In the western plain about 20 hectares of doura (*Andropogon Sorghum*) and bultuc (*Pennisetum typhoideum*) were damaged at Barentú during October; at Ducambia numbers of fields of doura were also spoilt.

Extensive crops of doura were attacked in the region of Cheren, Begiuk, Bab Giangheren, Ad Tacles, Ad Témariam, Bet Galerú, Ad Adembes, Ad Zamat.

United States of America: Tomato Late Blight (3).

A destructive outbreak of tomato late blight in Massachusetts is reported by O. C. Boyd and E. F. Guba. Whether the fungus (*Phytophthora infestans* De By.) on tomatoes is identical in all respects with that on potatoes or is a biologically distinct strain is still an open question in the United States. This disease has, hitherto, only been observed occasionally on tomatoes in New England, and has caused only minor injuries to foliage or fruit. The last outbreak of any severity in

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

(2) Communication from the official correspondent of the Institute, Dr. Rolando GUIDOTTI, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

(3) Communication from the official correspondent of the Institute, Dr. Neil E. STEVENS, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

Massachusetts occurred in 1905 and judging by the reports, it was rather insignificant compared to the destruction caused this year.

Beginning about the middle of September on early tomatoes in Worcester and Bristol Counties the disease spread rapidly to late varieties, and attacked both young and old plants, in some instances destroying not only the early plantings but the later ones as well. Its progress was apparently favored by cool wet weather including clear nights with heavy dews.

By the middle of October, the disease was causing large losses to the fall green house crop of tomatoes, and seems to be especially severe in leaky green-houses and in those where the growers have practised careless methods of watering or have failed to heat and to ventilate properly. It is not yet possible to estimate the extent of loss but it will obviously be large. One serious economic effect is that the presence of the disease has stopped all speculative buying since tradesmen realize that diseased lots will rot in the packages.

India: New Diseases in the Bombay Presidency (1).

The following parasites have been recorded for the first time in the Bombay Presidency:

- (a) A species of *Uredo* probably *Uredo fici* (*Cerotelium fici* [Cast.] Arth.) on *Ficus benghalensis* L.
- (b) *Puccinia helianthi* Schw. on *Helianthus annuus* L.
- (c) A species of *Striga* on *Paspalum scrobiculatum* L.

It may also be noted that a race of bacteriophage specific against *Pseudomonas citri* Hasse has been isolated from leaves of citrus affected by citrus canker.

Latvia: Crop Diseases observed in 1932 (2).

During 1932 no serious damage due to plant diseases has been reported.

Oats were however more severely attacked by *Puccinia coronifera* Kleb. than usually. Sugar beet tops were frequently attacked by *Cercospora beticola* Sacc. Fairly frequently cases of infection with *Sclerotinia fructigena* Schröt. on apples and *Scl. cinerea* (Bon.) Schröt. on cherries were detected. *Podosphaera leucotricha* (Ell. et Ewerh.) Salm. made its appearance in two nursery gardens. *Cronartium ribicola* Dietr. and *Septoria Ribis* Desm. caused premature dropping of the leaves of black currant. Attacks of *Peronospora Spinaciae* Laubert were also reported on vegetables. Tomatoes were attacked also by *Didymella Lycopersici* Kleb., *Septoria Lycopersici* Speg. and *Cladosporium fulvum* Cooke et Rav.

(1) Communication from the official correspondent of the Institute, Dr. B. N. UPPAL, Plant Pathologist to Government, Bombay Presidency, Poona.

(2) Communication from the official correspondent of the Institute, Professor MAX EGLITS, Phytopathological Laboratory of the University, Riga.

Turkey : Certain Insect Pests of Crop Plants in Western Anatolia (1).

According to information supplied by Mr Nihat Schevket bey, Director of the Entomological Laboratory of Smyrna, newly planted vines, grafted vines, sown crops, nursery gardens and tobacco fields have been seriously damaged by *Opatrum verrucosum* Germ., *Opatroides punctulatus* Brull. and *Gonocephalum rusticum* Oliv.

The worst damage was in the vicinity of Smyrna and particularly in tobacco growing near uncultivated fields, vineyards and gardens.

Control method :— The land to be planted with tobacco is ploughed again before planting out the seedlings. A poison is prepared by mixing well 10 kg of bran, a half kilo of Paris green, a little molasses and a little water. The mixture is spread on the fields in little heaps about the size of a walnut 2 to 4 days before the tobacco is planted out. To prevent the heaps drying out too quickly they are covered over with leaves and green weeds. The insects during the day seek cool damp places for shelter, eat the bran and are poisoned.

VARIOUS QUESTIONS

Resolutions of the Second International Conference for Anti-Locust Investigation (2).

Acting on the suggestion contained in the fifth resolution of the International Meeting for the Study of the Locust Problem which met in Rome, September 28-October 1, 1931, [see this *Bulletin*, 1932, No. 1, pp. 6-10], the French Government organised the Second International Conference for Anti-Locust Investigation in Paris on the occasion of the Fifth International Entomological Congress (15-23 July, 1932). Representatives of Belgium, the British Empire, Egypt, Spain, Ethiopia, Italy, Liberia and France were present.

The following resolutions were passed : —

The Second International Conference for Anti-Locust Investigation, taking cognizance that all prerogatives of the International Institute of Agriculture of Rome resulting from the International Convention of 31 October 1920, relating to the organisation of locust control, remain unchanged, and being regarded as of purely scientific standing, proposes as follows : —

(A) General Questions.

I. — The members of the Second International Conference for Anti-Locust Investigation are unanimously agreed that an effective control of locusts in Africa

(1) Communication from the official correspondent of the Institute, Mr M. SUREYA, Councillor of State, Ankara.

(2) From the Report of the meetings of the Conference prepared by the Ministry of Foreign Affairs of France.

and Western Asia cannot be achieved by the isolated efforts of each single State and Colony. Studies carried out in recent years show conclusively that there exists a close interdependence between locust invasions over vast regions.

II. — All local efforts at control have up to the present been exclusively defensive in nature and no genuinely satisfactory solution of the locust problem can be hoped for except by a rational organisation of scientific investigations in the zone in which originate the swarms that disperse over the continents.

When the breeding grounds are known and the conditions leading to the production of swarms have been studied it will then be possible to draw up a scheme of defence to prevent in future the multiplication of locusts.

III. — Investigation of the locust breeding and migrations must be conducted on an international plan with the full cooperation of all the States concerned in the locust problem.

At present there is official cooperation only between Belgium, Great Britain, France and Italy with their Colonies and Protectorates.

The following States must be invited to collaborate in the international research: Afghanistan, Arabia (Hejaz and Nejd, Yemen, Oman), British India, Iraq, Persia, Portugal, Turkey and the Union of Socialist Soviet Republics.

In the course of the Conference the representatives of Abyssinia, Spain, Egypt and Liberia undertook to present for the approval of their respective Governments the various proposals of the Conference, already passed by their Delegates.

IV. — A general plan of research drawn up without losing sight of the necessity of obtaining practical results within a reasonable time, comprises two main conceptions.

One is the centralisation and study of all locust data in a single scientific institution.

The other is the discovery and study of the original breeding grounds by entomologists specially appointed for the work.

V. — The decision of the First International Meeting of Rome, recognising the Imperial Institute of Entomology of London as the International Centre for Anti-Locust Investigation is finally accepted by the present Conference. This Conference lays special emphasis on the need for all the States of Europe, Africa and Western Asia which are subject to locust invasions to cooperate with the International Centre.

VI. — The international investigations are to be under the general direction of and coordinated by the International Conferences for Anti-Locust Investigation. These Conferences should continue to meet annually.

It is eminently desirable that the States taking part in the international investigations should be represented at the Conferences by locust specialists, with a view to the discussion of their work and to ensure for the following years the coordination of locust investigations from all points of view.

The Third International Conference will be held in London in 1933 if the British Government is willing to accept the suggestion.

(B) Programme of the International Centre for Anti-Locust Investigation, in London.

I. — One of the principal functions of the International Centre for Anti-Locust Investigation, London, consists in assembling all the useful information on the breeding and migration of locusts.

For this purpose it would be advisable to ask all the States cooperating in the investigation : —

(a) to organise a system by which all swarms and all cases of breeding will in each State be communicated by the administrative personnel to a local Centre;

(b) to provide for the monthly condensing of these local reports and their transmission, together with maps drawn up in accordance with the system of signs adopted by the International Meeting of Rome [see this *Bulletin*, 1932, No. 1, p. 10] to the International Centre as rapidly as possible and at least once a month. During the months when locusts are not reported in the country a negative report should however be sent. Reports or maps should be drawn up separately for each species of locust*.

II. — The Governments of the States in which there is no entomological or agricultural Service able to collect the documentation relating to locusts shall give the necessary instructions to their local officials in order that they may report all locust activities. Such information shall be transmitted monthly and as rapidly as possible to the International Centre in London*.

III. — Since at least 3 distinct species of locusts form swarms in Africa it is very important that special attention should be paid to their correct identification. To ensure this local reporters should be asked to send with their reports specimens of the locusts or at least of their wings. In cases in which the specimens cannot be identified locally they should be sent to the regional Centre or failing that to the International Centre.

IV. — The Conference would ask that the highly important documentation now in the possession of the International Institute of Agriculture in Rome should be made accessible to the International Centre.

V. — A certain amount of information concerning previous locust invasions being kept in the files of the local administrative offices, all States cooperating in the investigation are asked to allow the documents to be examined by competent persons and particularly by agents of the International Centre or of the regional or local Centres.

VI. — The International Centre for Anti-Locust Investigation will on the basis of the information received prepare quarterly reports on the locust situation in all the regions invaded. These reports will be distributed to all the States taking part in the investigation.

* It is understood that the obligations of the different States resulting from the Convention and Agreement of Rome of 31 October 1920 remain whole and unchanged, more particularly that relating to the rapid reporting from State to State of swarms or hopper bands liable to pass the administrative frontiers.

Such reports will however be adequately complete and up-to-date only if the information is transmitted each month to the International Centre and as far as possible before the end of the month following that to which it refers.

VII. — It is of extreme importance for all persons working on the locust problem to be acquainted with the work carried out in other States. The International Centre in London will be able to help in this matter by periodical publication of a list of the works and notes that have appeared relating to locusts. Such lists will be able to be complete only on condition that copies or reprints of all the published matter relating to locust control are sent without delay to the International Centre.

(C) Research in the Field.

I. — The Conference emphasises the necessity for appointing in each State or group of territories entomologists for the special study of locust questions to be stationed in the infested zones and relieved of all other duties. Such appointments must be for periods of at least three years, for the observations relating to a given zone must extend over at least a whole year in order to give an accurate idea of the annual cycle and repetition of the studies over 2 or 3 seasons can alone lead to well-founded conclusions.

II. — The present state of knowledge does not allow of the Conference presenting a definite programme for investigation which must vary with the different zones. The following points may however be recommended to the attention of the local entomologists: —

(a) Organisation of a regular system of information concerning locust activities.

(b) Survey of the geographical, ecological and seasonal distribution of each species of locust and of their phases.

(c) Studies in field laboratories of the life cycle and seasonal movements of locusts in relation with the seasonal cycle and with seasonal changes in vegetation.

(d) Collection and critical study of all old reports of locust activities in the same State and in neighbouring States where there are not entomologists.

With regard to the last mentioned States, the Conference wishes to ask their Governments to give authorisation for the official entomologists to penetrate when necessary into their territories for purposes of locust enquiries.

III. — Taking into consideration the investigation already organised for the coming season in British, Egyptian and French territories in Africa, the Conference emphasises the urgent necessity for the appointment of entomologists for the following territories: —

Territory	Locust Species	Government
Rio de Oro — Ifni	<i>Schistocerca</i>	Spain
Northern part of the French Sudan, of the French Niger, and the north of the Chad Territory	<i>Schistocerca</i>	France
The middle Niger	<i>Locusta</i>	France and Great Britain
North and north-eastern regions on the shores of Lake Chad	<i>Locusta</i>	France
Eritrea and Italian Somaliland	<i>Schistocerca</i> and <i>Locusta</i>	Italy
Belgian Congo	<i>Locusta</i> and <i>Nomadacris</i>	Belgium
Persia	<i>Schistocerca</i>	Persia

Before entry of a foreign territory by the official entomologists a preliminary agreement will be established between the Centres for Locust Studies represented at the Conference: — London for Great Britain, Cairo for Egypt, Algiers for France and Portici for Italy.

IV. — The field entomologists will keep in close contact with their regional Centre and with the International Centre in London. The Centres will assist them with information about methods of work, about the situation in other territories, about recent publications and about identification of specimens sent to them.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany (1). — By Decree of 29 October 1932 bearing on the Decree of 8 July 1932 [see this *Bulletin*, 1932, No. 11, p. 182] which purposes to prevent the introduction of the San José scale [*Aspidiotus perniciosus*] and the apple maggot [*Rhagoletis pomonella*], there have been added to the list of customs offices authorised to allow the entry of fresh fruits and fresh fruit waste submitted to phytosanitary inspection and coming from Austria or Hungary, the following customs offices: —

Mittelwalde Bahnhof in Prussia and Simbach, Kufstein, München Grossmarkthalle and Salzburg in Bavaria.

* * By Decree of 9 November 1932, which came into force on 15 December 1932, with a view to preventing the introduction of diseases and pests of *Azalea indica* [= *Rhododendron indicum*], the importation of plants of this species attacked or suspected of being attacked by *Septoria Azaleae*, *Exobasidium Azaleae*, *Gracilaria azaleella* and *Acalla schalleriana* is forbidden until further order.

Importation will however be allowed on condition that each consignment is accompanied by a certificate written in German and the language of the country of origin and issued by an expert of the Plant Protection Service of the country of origin, stating that the consignment has been inspected and found free from the diseases and pests specified above.

Transit under supervision by the customs authorities is allowed. (*Reichsgesetzblatt*, Teil I, Berlin, 17. November 1932, Nr. 75, S. 528).

Germany (Brunswick) (1). — The Law of 17 October 1932 confers on the Minister of the Interior the right to decree the necessary regulations for the control of agents injurious to the health of man and animals and of agents liable to damage the development of plants or the quality of plant products.

Offences will be punishable by fines not exceeding 150 RM or imprisonment for a period not exceeding six weeks.

(1) Communication from the Biologische Reichsanstalt für Land- und Forstwirtschaft, Berlin-Dahlem, official correspondent of the Institute.

Germany (Hamburg) (1). — By Decree of 7 October 1932 the obligatory clearing of thistles [*Carduus*] must be extended to all land including roads, waste land, banks, ditches, hedges and embankments.

The other provisions of this Decree correspond to those adopted by the Police Ordinance of 20 June 1931 [see this *Bulletin*, 1931, No. 10, p. 188].

Germany (Province of Hanover) (1). — By Decree of 10 October 1932 it is made obligatory in certain districts of the province of Hanover to apply control measures against 'Spargelfliege' [*Platyparea poeciloptera*] and asparagus rust [*Puccinia Asparagi*].

The regulations relating to the compulsory destruction each year of asparagus shoots are similar to those in force in Anhalt [see this *Bulletin*, 1932, No. 11, p. 182]. The operations must however be completed by 1st December of each year. Should asparagus rust make its appearance very early in the year it might be necessary to order an earlier date for the carrying out of the work.

The owner or holder of asparagus beds will be held responsible for the carrying out of the operations prescribed in this Decree.

Plum
Germany (District of Münster) (1). — By Decree of 16 August 1932 proclaimed by the President of the District of Münster, with a view to the control of poplar canker (*Nectria coccinea* var. *sanguinella*) every landowner who shall find this disease on Canadian poplars on his land is required to report it within a week to the police, who will have the trees examined by experts.

If the examination shows that the poplars are really attacked by canker the police will order their immediate destruction.

Within certain localities specified in the present Decree it is forbidden to plant Canadian poplars.

Germany (Prussia). — By Decree No. 13808 of 10 November 1932 it is forbidden to keep living Colorado beetles (*Leptinotarsa decemlineata*) in any stage of the life history or to breed or trade in such beetles (purchase, sale, consignment, etc.).

Offences will be punishable by a fine not exceeding 150 RM or imprisonment. (*Preussische Gesetzsammlung*, Berlin, 25. November 1932, Nr. 63, S. 353).

Western Australia. — On 14 September 1932 (Agric. No. 2070/25; Ex. Co. No. 1570) the Director of Agriculture notified that Paterson's Curse (*Echium violaceum*) has been declared a noxious weed within the boundaries of the Victoria Plains District Road Board. (*Government Gazette of Western Australia*, Perth, 16 September 1932, No. 46, p. 1456).

(1) Communication from the Biologische Reichsanstalt für Land- und Forstwirtschaft, Berlin-Dahlem, official correspondent of the Institute.

* * On the 27 October 1932 the Director of Agriculture notified that *Walsonia* [see this *Bulletin*, 1932, No. 2, p. 26] has been declared a noxious weed within the boundaries of the Manjimup Road Board, Harvey Road Board and Balingup Road Board Districts. (*Government Gazette of Western Australia*, Perth, October 28, 1932, No. 54, p. 1648).

Bulgaria. — By a letter dated 13 December 1932 the Bulgarian Ministry of Agriculture and Estates has informed the International Institute of Agriculture that Bulgaria will shortly ratify the International Convention for Plant Protection of 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55].

Canada (1). — By Regulation No. 1 (Export) effective on and after October 22, 1932 the export of apples comprising all varieties of the fresh fruit, to any country other than the United States of America, is prohibited, unless the shipment intended for export is accompanied by a certificate of inspection issued and signed by an inspector duly appointed under the Destructive Insect and Pest Act.

It shall be illegal for any common carrier, steamship company, or any person to accept for export any such shipment unless the required certificate accompanies the shipping papers.

Spain. — By 'Orden' of 17 November 1932 has been formed an 'Instituto de Investigaciones Agronómicas' (Institute of Agricultural Research) grouping all the Centres of an experimental nature which now are under the 'Dirección general de Agricultura'. The Centres will according to their respective personnel and equipment extend their activities to research work.

The Institute will be divided into eight Sections, the first of which is that of Phytopathology. (*Gaceta de Madrid*, Madrid, 24 noviembre 1932, año CCLXXI, tomo IV, núm. 329, págs. 1357 y 1358).

rance. — By Ministerial Decree of 17 November 1932 an Inspector General of Agriculture has been made responsible for coordinating the branches of the Plant Protection Service (phytopathological research, permanent and voluntary crop protection, phytosanitary police). (*Journal Officiel de la République Française*, Paris, 20 novembre 1932, LXIV^{ème} année, n° 271, p. 12089).

* * By modification of the provisions of the Decree of 26 November 1930 [see this *Bulletin*, 1931, No. 2, p. 28] forbidding the entry into France of plants capable of introducing *Rhabdochline Pseudotsugae*, and of those of the Decrees of 18 April and 21 May 1932 [see this *Bulletin*, 1932, No. 5, p. 80, and No. 8, p. 132] instituting measures concerning importation of plants and giving effect to article 3

(1) Communication from the Entomological Branch, Department of Agriculture, Ottawa, Canada, to the International Institute of Agriculture.

of the above mentioned Decree of 26 November 1930, the importation of cut stems of conifers (Christmas trees) free from soil was authorised during the period from 1 to 25 December 1932. (*Ibid.*, Paris, 27 novembre 1932, n° 277, p. 12355).

Italy (1). — By Ministerial Decree of 4 August 1932, which took effect from 1 September 1932, two new Royal Phytopathological Observatories (RR. Osservatorii di Fitopatologia) have been formed in addition to those already in existence, having their respective headquarters at Bolzano and San Remo.

The districts to be served by the new observatories are defined as follows:

Royal Phytopathological Observatory of Bolzano: provinces of Bolzano and Trento.

Royal Phytopathological Observatory of San Remo: provinces of Imperia and Savona.

From the same date the Royal Phytopathological Observatories of the Venezia Tridentina and Chiavari ceased including within their jurisdiction the provinces of Bolzano, Trento, Imperia and Savona.

* * By Ministerial Decree of 15 November 1932 shooting and snaring of birds by any means and at any time are forbidden until further order in the island of Capri. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 22 novembre 1932, anno 73°, n. 269, pp. 5243-5244).

Netherlands (The). — By a letter dated 25 November 1932 the Minister of National Economy and Labour has communicated to the International Institute of Agriculture, in conformity with article 11 of the International Convention for Plant Protection signed at Rome 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55], the list of plant diseases and pests against which the Netherlands desire more particularly to be protected and which should be entered on the health certificates.

The list in question, which was published in the Netherlands official gazette (*Nederlandsche Staatscourant*) of 10 November 1932, consists of:—

(1) potato wart disease (*Chrysophlyctis endobiotica* [*Synchytrium endobioticum*]).

(2) cherry fruit fly (*Rhagoletis cerasi*)

(3) Colorado beetle (*Leptinotarsa decemlineata*).

Dominican Republic. — In consequence of the disease of cacao known as 'escoba de bruja' (*Marasmius pernicius*) occurring in Ecuador, Surinam, Trinidad and probably in other countries, by Presidential Decree No. 343 of 4 February 1932 the introduction of living plants, parts of plants, seeds and pods of cacao coming from any of these countries is forbidden.

(1) Communication from the Ministry of Agriculture and Forests to the International Institute of Agriculture.

The Ministry of Agriculture and Commerce will issue no permit for importation of botanic material, nor seeds or pods or living plants of cacao coming from countries other than those mentioned unless there is certainty that the disease in question does not occur in the country of provenance. (*Revista de Agricultura y Comercio*, Órgano Oficial del Departamento de Agricultura y Comercio, Santo Domingo, Rep. Dominicana, Febrero de 1932, vol. XXIII, núm. 29, pág. 375).

* * In view of the serious danger that the 'piogan' (sweet potato weevil, *Cylas formicarius*) may be for the sweet potato [*Ipomoea Batatas*] crops and in consequence of the presence of breeding centres of the insect in certain places in the provinces of Monte Cristy, Puerto Plata, Santiago, Moca, La Veya y Duarte, in order to prevent as far as possible its introduction into the eastern and southern provinces, by Presidential Decree No. 479 of 30 June 1932 it is forbidden for farmers of the communes and divisions of the provinces of Seybo, San Pedro de Macoris, Santo Domingo, Azua and Barahona to utilise plants, parts of plants or tubers of sweet potato as seed if they come from any place in the region of Cibao. Similarly it is forbidden for any owner or driver of trucks, lorries or vessels, or any other person, to transport plants, parts of plants or tubers of sweet potato from any locality in the region of Cibao to places or communes of the provinces named.

It is also forbidden to utilise the aerial parts of sweet potato plants as fodder for animals in transport from or to the places named above. Transportation of sweet potatoes for food coming from the infested zone and addressed to the city of Santo Domingo will be allowed only if the potatoes are found by the inspector or inspectors appointed by the Ministry of Agriculture and Commerce to be free from the pest. The Ministry of Agriculture and Commerce will issue the necessary regulations to give effect to the present Decree and will organise a Service of inspection in places where it is considered necessary. This Service will issue free of charge certificates of health or of destruction in cases in which the latter has been decided on and carried out. Any quantity of plants or parts of plants or tubers of sweet potato which is found on inspection to be infested with eggs, larvae or adults of the 'piogan' must be burnt by the officials appointed by the Ministry of Agriculture and Commerce in accordance with the Ministry's instructions.

Any infringement of the present Decree will be punishable by a fine of from 6 to 100 American gold pesos or by imprisonment for from 5 to 100 days. (*Ibid.*, Julio de 1932, núm. 34, pág. 539).

* * In view of the fact that the Mediterranean fruit fly (*Ceratitis capitata*) does not exist in Florida, United States of America, by Presidential Decree No. 497 of 19 July 1932 the Decree No. 1108 of 26 April 1929 has been annulled, consequently importation of seeds, fruits and vegetables in general, coming from Florida, is allowed. (*Ibid.*, Agosto de 1932, núm. 35, pág. 577).

Tunis (Regency of). — A Decree of the Director General of Agriculture, Commerce and Land Settlement, dated 26 July 1932, provides that by modification of the regulations of the Decree of 11 July 1932 [see this *Bulletin*, 1932, No. 12, pp. 208-210] until further order importation without a certificate of phytosanitary inspection is allowed for the following plant products or plant parts:— (1) seeds of all kinds excepting berseem [*Trifolium alexandrinum*]; (2) fresh and forced fruits with the exception of those originating in or coming from the following countries in which the presence of the San José scale has been proved:— South Africa, Argentina, Australia, Canada, Chile, China, United States of America, Hawaii, Japan, Mexico, New Zealand; (3) fresh vegetables not forbidden under the legislation relating to grape phylloxera [*Phylloxera vastatrix*]; (4) cut flowers.

By a further Decree of the same date the list of plant and animal parasites considered dangerous to crops and to which are applicable the measures contained in the Decree of 11 July 1932 is as follows:—

I. — Plant parasites.

Bacillus amylovorus (fruit trees); *Cuscuta aegyptiaca* (berseem); *Deuterophoma tracheiphila* (citrus trees); *Endothia parasitica* (chestnut); *Pseudomonas Citri* (citrus trees); *Synchytrium endobioticum* (potato).

II. — Animal parasites.

Aleyrodes citri (citrus trees); *Anthonomus grandis* and *A. vestitus* (cotton); *Aspidiotus perniciosus* (citrus trees and other plants); *Ceroplastes sinensis* (citrus trees); *Chrysomphalus aonidum* and *C. dictyospermi* (citrus trees and other plants); *Diaspis pentagona* (mulberry); *Doryphora* (*Leptinotarsa*) *deceemlineata* (potato); *Iridomyrmex humilis* (all crops); *Margarodes vitium* (vine); *Mytilaspis gloveri* (citrus trees); *Pectinophora gossypiella* (cotton); *Phthorimaca operculella* (potato); *Pseudococcus filamentosus* (citrus trees and vine). (*Bulletin de la Société d'Horticulture de Tunisie*, Tunis, 15 novembre 1932, 30^e année, n° 292, p. 179-180).

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[*Schistocerca paranensis*].

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[*Holcus halepensis* is one of the worst weeds of California].

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[The most important weeds are :— *Echinochloa Crus-galli*, *Ammannia coccinea*, *Scirpus* sp., *Rumex crispus*, *Echinodorus cordifolius*, *Alisma Plantago*, *Typha latifolia*, *Leptochloa fascicularis*, *Eleocharis palustris*, etc.].

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BÖHME, O. Kranke Kakteen. Kakteenschädlinge und -Krankheiten sowie ihre Bekämpfung. Neudamm, Verlag von J. Neumann, [1932], 46 S., 25 Abb.

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The writer describes in turn the pests, plant parasites and the non-parasitic diseases and the methods of control. The numerous and clear illustrations facilitate the reader's understanding of the text].

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[The writer tested with favourable results, from June 1931 to October 1932, on elms infected with *Graphium Ulmi* the following method of cure :— immediately the first symptoms of disease are observed to cut the affected branches back until healthy wood is reached, at once burning the removed parts; then to disinfect the cut surface, the branches, trunk and principal roots (previously uncovered) with a mixture of water (100 litres), iron sulphate (8 kg.) and slaked lime (1 kg.); to cover over the roots again immediately and spread on the ground pieces of iron sulphate to the amplitude of the foliage of the tree; then cover the cut surface, as soon as it is dry, with tar or some other protective substance.

The writer has found no trace of recurrence of the disease on any of the trees thus treated.

Fully grown trees infected for two years or longer and which are badly diseased, are to be felled promptly with care to extract the roots and mixing quick lime with the soil in the hole; the bark is to be immediately removed from the branches and trunk and used at once for burning; the remainder is to be cut up and promptly used as fuel].

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[*Xylotrechus quadripes*, a larva of *Cerambycidae*, *Xyleborus* spp., *Stephanoderes hampei*, *Holotricha* sp., *Lachnosterna* sp., *Euchlora viridis*, *Apogonia* spp., *Diapromorpha melanopus*, *Phytorus dilatatus*, *Xypomyces* spp., *Corigerus mandarinus*, *Aslycus chrysochlorus*, *Archines destructor*, *Andraca bipunctata*, *A. apodecta*, *Stauropus alternus*, *Heterusia* spp., *Clania* spp., *Pagodia* (*Eumeta*) *hekmeyeri*, *Amatissa* spp., *Acanthopsyche* spp., *Psyche assamica* (?), *Zeuzera coffeae*, *Thosea* spp., *Setora nitens*, *Parasa lepida*, *Belippa lohor*, *Chalcocelis albiguttata*, *Orgyia* spp., *Nygmia* spp., *Agrotis* spp., *Arbela* spp., *Ptochoryctis simbleuta*, *Comocritis pieria*, *Biston* spp., *Ectropis crepuscularia*, *Homona coffearia*, *Cacoecia micaceana*, *Adoxophyes privata*, *Laspeyresia leucostoma*, *Gracilaria theivora*, *Agriphora rhombata*].

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[The same idea which in 1926 led Malenotti to write for the Italian public a manual on the useful insects for plants has now suggested to Mercet to publish the present volume on the parasites of insect pests.

Among Spanish entomologists Mercet is particularly well fitted to deal with this subject in view of his long experience.

In a readable but scientific form the writer briefly describes the present knowledge of the action of parasites on plant pests; he deals with the possible utilisation of the useful insects in the control of insect pests and their breeding for the purpose. He describes more in detail the parasites of certain highly destructive plant pests such as *Lymantria dispar*, *Thaumetopoea pityocampa*, *Phthorimaea operculella*, *Pyrausta nubilalis*, *Sesamia nonagrioides*, *Chrysomphalus dictyospermi*, *Aulacaspis pentagona*, *Eriosoma lanigerum*, *Ceratitis capitata*, *Dacus oleae*, etc.].

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NOTES

New Official Correspondents of the Bulletin. — The following have been appointed by their respective Governments as official correspondents of the International Institute of Agriculture for questions relating to plant protection :— A. MALLAMAIRE, Ingénieur d'Agronomie Coloniale, Directeur du Laboratoire de Phytopathologie de la région équatoriale de l'Afrique Occidentale Française, La Mé par Bingerville, Ivory Coast ; Maung Thet SU, B. Ag., Mycologist, Department of Agriculture, Agricultural College, Mandalay, Burma, British India ; Philippe KLAT, Ingénieur, Chef du Service Agricole de la République Libanaise, Beyrouth ; Francesco DESSV, Dottore, Direttore dell'Agricoltura e delle Foreste, R. Governo delle Isole Italiane dell'Egeo, Rodi, Aegean Islands.